

PATENT  
Attorney Docket No. PC10770B US

**Claim Listing:**

1-9. (Cancelled)

10. (Currently Amended) A pharmaceutical composition for treating or preventing a disorder or condition selected from autoimmune diseases, rheumatoid arthritis, type I diabetes (recent onset), lupus, inflammatory bowel disease, optic neuritis, psoriasis, multiple sclerosis, polymyalgia rheumatica, uveitis, and vasculitis, acute and chronic inflammatory conditions osteoarthritis, adult Respiratory Distress Syndrome, Respiratory Distress Syndrome of infancy, ischemia reperfusion injury, glomerulonephritis, and chronic obstructive pulmonary disease (COPD) allergic conditions, asthma and atopic dermatitis, inflammation associated with infection, viral inflammation, influenza, hepatitis and Guillian-Barre, chronic bronchitis, chronic or acute tissue, cell, and solid organ transplant rejection, xeno-transplantation, atherosclerosis, restenosis, HIV infectivity (co-receptor usage), and granulomatous diseases, sarcoidosis, leprosy and tuberculosis, and sequelae associated with cancers, multiple myeloma; limiting the production of cytokines and/or TNF at inflammatory sites, as a consequence of decreasing cell infiltration; for treating diseases and/or congestive heart failure, linked to TNF and IL-1 and for treating pulmonary emphysema or dyspnea associated therewith, emphysema; HIV-1, HIV-2, HIV-3; cytomegalovirus (CMV), adenoviruses, Herpes viruses (*Herpes zoster* and *Herpes simplex*), for treating sequelae associated with infection where such infection induces production of detrimental inflammatory cytokines and/or TNF, fungal meningitis, joint tissue damage, hyperplasia, pannus formation and bone resorption, psoriatic arthritis, hepatic failure, bacterial meningitis, Kawasaki syndrome, myocardial infarction, acute liver failure, lyme disease, septic shock, cancer, trauma, and malaria, in a mammal, comprising an amount of a compound according to claim 20-~~or~~ 24, or a pharmaceutically acceptable salt thereof, that is effective in treating or preventing such disorder or condition and a pharmaceutically acceptable carrier.

11. (Currently Amended) A pharmaceutical composition for treating or preventing a disorder or condition that can be treated or prevented by inhibiting chemokine binding to the receptor CCR1

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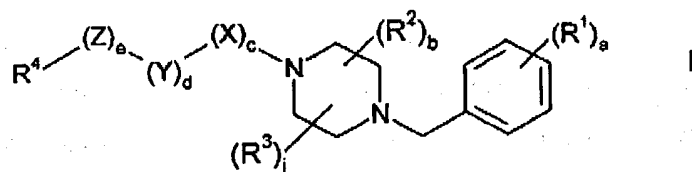
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in a mammal, comprising an amount of a compound according to claim 20 or 21, or a pharmaceutically acceptable salt thereof, effective in treating or preventing such disorder or condition and a pharmaceutically acceptable carrier.

12-19. (Cancelled)

20. (Currently Amended) A compound of the formula



or the pharmaceutically acceptable salt thereof; wherein

$R^1$  is independently selected from hydrogen, halo, cyano, nitro, trifluoromethyl, trifluoromethoxy,  $(C_1-C_6)$ alkyl, hydroxy or  $(C_1-C_6)$ alkylcarbonyloxy;

$R^2$  and  $R^3$  are each independently selected from  $(C_1-C_6)$ alkyl,  $(C_3-C_8)$ cycloalkyl, amino $(C_1-C_6)$ alkyl, amino $(C_3-C_8)$ cycloalkyl,  $(C_1-C_6)$ alkylamino $(C_1-C_6)$ alkyl,  $(C_1-C_6)$ alkylamino $(C_3-C_8)$ cycloalkyl, hydroxy $(C_1-C_6)$ alkyl,  $(C_1-C_6)$ alkoxycarbonylamino $(C_1-C_6)$ alkyl, ureido $(C_1-C_6)$ alkyl,  $(C_1-C_6)$ alkylureido $(C_1-C_6)$ alkyl,  $(C_2-C_9)$ heteroaryl $(C_1-C_6)$ alkyl or  $(C_2-C_9)$ heterocycloalkyl $(C_1-C_6)$ alkyl;

$R^4$  is  $(R^5)(R^6)(C_6-C_{10})$ aryl or  $(R^5)(R^7)(C_2-C_9)$ heteroaryl wherein f, g and h are independently 1 or 2;

$R^5$  is  $(C_2-C_9)$ heterocycloalkylcarbonyl,  $(C_2-C_9)$ heteroarylcarbonyl,  $(C_2-C_9)$ heteroaryl $(C_1-C_6)$ alkylaminocarbonyl,  $(C_2-C_9)$ heterocycloalkyl $(C_1-C_6)$ alkylaminocarbonyl,  $(C_1-C_6)$ alkylsulfonylamino $(C_1-C_6)$ alkylaminocarbonyl, ureido $(C_1-C_6)$ alkylaminocarbonyl,  $(C_1-C_6)$ alkylureido $(C_1-C_6)$ alkylaminocarbonyl,  $((C_1-C_6)alkyl)_2$ ureido $(C_1-C_6)$ alkylaminocarbonyl, aminosulfonyl $(C_1-C_6)$ alkylaminocarbonyl,  $(C_1-C_6)$ alkylaminosulfonyl $(C_1-C_6)$ alkylaminocarbonyl,  $(C_1-C_6)$ alkylsulfonylamino $(C_1-C_6)$ alkylcarbonylamino, cyanoguanidino $(C_1-C_6)$ alkylcarbonylamino,  $(C_1-C_6)$ alkylcyanoguanidino $(C_1-C_6)$ alkylcarbonylamino,  $((C_1-C_6)alkyl)_2$ cyanoguanidino $(C_1-C_6)$ alkylcarbonylamino, aminocarbonyl $(C_1-C_6)$ alkylcarbonylamino,  $(C_2-C_9)$ heteroaryl $(C_1-$

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C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ureido(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>ureido(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminocarbonyloxy(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, acetylamino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (acetyl)((C<sub>1</sub>-C<sub>6</sub>)alkyl)amino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminosulfonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, cyano(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, wherein R<sup>5</sup> is amino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl amino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonyl amino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyloxycarbonyl amino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl amino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ureido(C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>ureido(C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkyl, ~~or~~ cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkyl, amino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, acetylamino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (acetyl)((C<sub>1</sub>-C<sub>6</sub>)alkyl)amino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ureido(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>ureido(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, cyanoguanidino(C<sub>1</sub>-

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$C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>(cyanoguanidino)( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, aminocarbonyl( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkoxycarbonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heterocycloalkyloxycarbonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heteroaryloxycarbonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, aminosulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylaminosulfonylamino( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>aminosulfonylamino( $C_1$ - $C_6$ )alkyl, cyanoguanidino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heterocycloalkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heteroaryl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heterocycloalkyl( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heteroaryl( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, amino( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylamino( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>amino( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, aminocarbonyl( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylaminocarbonyl( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>aminocarbonyl( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, wherein  $R^5$  is ( $C_2$ - $C_9$ )heterocycloalkylsulfonyl, amino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_1$ - $C_6$ )alkylamino( $C_1$ - $C_6$ )alkylaminosulfonyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>amino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_2$ - $C_9$ )heteroarylaminosulfonyl, ureido( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkylaminosulfonyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>ureido( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_1$ - $C_6$ )alkoxycarbonylamino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_2$ - $C_9$ )heterocycloalkyloxycarbonylamino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_2$ - $C_9$ )heteroaryloxycarbonylamino( $C_1$ - $C_6$ )alkylaminosulfonyl, aminocarbonyl( $C_1$ - $C_6$ )alkylaminosulfonyl, cyanoguanidino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_2$ - $C_9$ )heteroaryl( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_2$ - $C_9$ )heterocycloalkylaminosulfonyl, halo( $C_1$ - $C_6$ )alkylaminocarbonyl, hydroxy( $C_1$ - $C_6$ )alkylureido, halo( $C_1$ - $C_6$ )alkylsulfonylamino, ( $C_1$ - $C_6$ )alkoxycarbonyl( $C_1$ - $C_6$ )alkylamino( $C_1$ - $C_6$ )alkyl, hydroxy( $C_1$ - $C_6$ )alkylaminocarbonylamino( $C_1$ - $C_6$ )alkyl, halo( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, aminosulfonyl, ( $C_1$ - $C_6$ )alkylaminosulfonyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>aminosulfonyl, hydroxy( $C_1$ - $C_6$ )alkylaminosulfonyl, or ( $C_1$ - $C_6$ )alkoxy( $C_1$ - $C_6$ )alkylaminosulfonyl;

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$R^6$  and  $R^7$  are each independently halo, halo( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkoxy, trifluoromethyl, trifluoromethoxy, hydroxy, aminocarbonyl, cyano, ureido, ( $C_1$ - $C_6$ )alkylsulfonylamino, ( $C_1$ - $C_6$ )alkoxycarbonylamino or glycylamino;

a is 1, 2, 3, 4 or 5;

b is 0, 1, 2, 3 or 4;

c is 1;

d is 1;

e is 1;

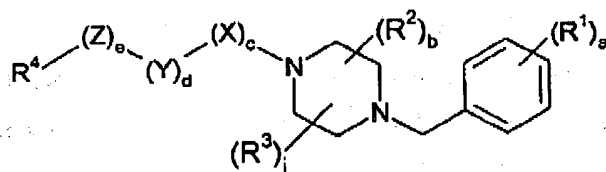
j is 1, 2, 3, or 4;

Y is  $CH_2$ ;

X is  $C(O)$ ; and

Z is oxygen.

21. (Withdrawn) A compound of the formula



or the pharmaceutically acceptable salt thereof; wherein

$R^1$  is hydrogen, halo, cyano, nitro, trifluoromethyl, trifluoromethoxy, ( $C_1$ - $C_6$ )alkyl, hydroxy or ( $C_1$ - $C_6$ )alkylcarbonyloxy;

$R^2$  and  $R^3$  are each independently selected from ( $C_1$ - $C_6$ )alkyl, ( $C_3$ - $C_8$ )cycloalkyl, amino( $C_1$ - $C_6$ )alkyl, amino( $C_3$ - $C_8$ )cycloalkyl, ( $C_1$ - $C_6$ )alkylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylamino( $C_3$ - $C_8$ )cycloalkyl, hydroxy( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkoxycarbonylamino( $C_1$ - $C_6$ )alkyl, ureido( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heteroaryl( $C_1$ - $C_6$ )alkyl or ( $C_2$ - $C_9$ )heterocycloalkyl( $C_1$ - $C_6$ )alkyl;

$R^4$  is  $(R^5)_f(R^6)_g(C_6-C_{10})$ aryl or  $(R^5)_f(R^7)_h(C_2-C_9)$ heteroaryl wherein f, g and h are independently 1 or 2;

$R^5$  is ( $C_2$ - $C_9$ )heterocycloalkylcarbonyl, ( $C_2$ - $C_9$ )heteroarylcarbonyl, ( $C_2$ - $C_9$ )heteroaryl( $C_1$ -

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C<sub>6</sub>alkylaminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino, aminosulfonyl(C<sub>1</sub>-C<sub>6</sub>)alkylamino, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkylamino, acetylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino, (acetyl)((C<sub>1</sub>-C<sub>6</sub>)alkyl)amino(C<sub>1</sub>-C<sub>6</sub>)alkylamino, cyano(C<sub>1</sub>-C<sub>6</sub>)alkylaminoalkyl, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, acetylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (acetyl)((C<sub>1</sub>-C<sub>6</sub>)alkyl)amino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ureido(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>ureido(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminocarbonyloxy(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, acetylamino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (acetyl)((C<sub>1</sub>-C<sub>6</sub>)alkyl)amino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminosulfonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, cyano(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, wherein R<sup>5</sup> is amino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl amino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonyl amino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyloxycarbonyl amino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ureido(C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-

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$C_6$ alkyl) $_2$ ureido( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkyl or cyanoguanidino( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkyl, amino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl) $_2$ amino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, acetylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, (acetyl)(( $C_1$ - $C_6$ )alkyl)amino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ureido( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl) $_2$ ureido( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, cyanoguanidino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl) $_2$ (cyanoguanidino)( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, aminocarbonyl( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkoxycarbonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heterocycloalkyloxycarbonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heteroaryloxycarbonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, aminosulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylaminosulfonylamino( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl) $_2$ aminosulfonylamino( $C_1$ - $C_6$ )alkyl, cyanoguanidino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl) $_2$ (cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heterocycloalkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heteroaryl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heteroaryl( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, amino( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylamino( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl) $_2$ amino( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, aminocarbonyl( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylaminocarbonyl( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl) $_2$ aminocarbonyl( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkyl, wherein  $R^5$  is ( $C_2$ - $C_9$ )heterocycloalkylsulfonyl, amino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_1$ - $C_6$ )alkylamino( $C_1$ - $C_6$ )alkylaminosulfonyl, (( $C_1$ - $C_6$ )alkyl) $_2$ amino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_2$ - $C_9$ )heteroarylaminosulfonyl, ureido( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkylaminosulfonyl, (( $C_1$ - $C_6$ )alkyl) $_2$ ureido( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_1$ - $C_6$ )alkoxycarbonylamino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_2$ - $C_9$ )heterocycloalkyloxycarbonylamino( $C_1$ - $C_6$ )alkylaminosulfonyl, ( $C_2$ - $C_9$ )heteroaryloxycarbonylamino( $C_1$ - $C_6$ )alkylaminosulfonyl, aminocarbonyl( $C_1$ -

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C<sub>6</sub>alkylaminosulfonyl, cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkylaminosulfonyl, halo(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkylureido, halo(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, halo(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminosulfonyl, (C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>aminosulfonyl, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, or (C<sub>1</sub>-C<sub>6</sub>)alkoxy(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl;

R<sup>6</sup> and R<sup>7</sup> are each independently halo, halo(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy, trifluoromethyl, trifluoromethoxy, hydroxy, aminocarbonyl, cyano, ureido, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonylamino or glycinamino;

a is 1, 2, 3, 4 or 5;

b is 0, 1, 2, 3 or 4;

c is 1;

d is 1;

e is 1;

j is 1, 2, 3, or 4;

Y is CH<sub>2</sub>;

X is C(O); and

Z is NR<sup>9</sup> wherein R<sup>9</sup> is hydrogen or (C<sub>1</sub>-C<sub>6</sub>)alkyl.

22. (Currently Amended) The compound of claim 20 or 21 wherein R<sup>5</sup> is (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkylcarbonyl, (C<sub>2</sub>-C<sub>9</sub>)heteroarylcarbonyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl, ureido(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl, (C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>ureido(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl, aminosulfonyl(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl or (C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl.

23. (Currently Amended) The compound of claim 20 or 21 wherein R<sup>5</sup> is (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino, cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino, (C<sub>1</sub>-

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C<sub>6</sub>alkylcyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino, or aminosulfonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino.

24. (Currently Amended) The compound of claim 20 or 21 wherein R<sup>5</sup> is amino(C<sub>1</sub>-C<sub>6</sub>)alkylureido, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkylureido, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)alkylureido, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl(C<sub>1</sub>-C<sub>6</sub>)alkylureido, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkylureido, aminosulfonyl(C<sub>1</sub>-C<sub>6</sub>)alkylureido, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylureido, (C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylureido, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylureido, acetylamino(C<sub>1</sub>-C<sub>6</sub>)alkylureido, or (acetyl)((C<sub>1</sub>-C<sub>6</sub>)alkyl)amino(C<sub>1</sub>-C<sub>6</sub>)alkylureido.

25. (Currently Amended) The compound of claim 20 or 21 wherein R<sup>5</sup> is amino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, acetylamino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (acetyl)((C<sub>1</sub>-C<sub>6</sub>)alkyl)amino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, ureido(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>ureido(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, aminosulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>aminosulfonylamino, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino or (C<sub>2</sub>-C<sub>9</sub>)heteroaryloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino.

26. (Currently Amended) The compound of claim 20 or 21 wherein R<sup>5</sup> is cyanoguanidino, (C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>cyanoguanidino, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkylcyanoguanidino, (C<sub>2</sub>-C<sub>9</sub>)heteroarylcyanoguanidino, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl(C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino, amino(C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino, (C<sub>1</sub>-

C<sub>6</sub>alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino, (C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino or ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino, wherein R<sup>5</sup> is aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino, aminosulfonyl(C<sub>1</sub>-C<sub>6</sub>)alkylamino, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkylamino, acetylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino or (acetyl)((C<sub>1</sub>-C<sub>6</sub>)alkyl)amino(C<sub>1</sub>-C<sub>6</sub>)alkylamino.

27. (Currently Amended) The compound of claim 20 or 21 wherein R<sup>5</sup> is cyano(C<sub>1</sub>-C<sub>6</sub>)alkylaminoalkyl or aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl.

28. (Currently Amended) The compound of claim 20 or 21 wherein R<sup>5</sup> is acetylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (acetyl)((C<sub>1</sub>-C<sub>6</sub>)alkyl)amino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylcyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ureido(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>ureido(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl or aminocarbonyloxy(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl.

29. (Currently Amended) The compound of claim 20 or 21 wherein R<sup>5</sup> is acetylamino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (acetyl)((C<sub>1</sub>-C<sub>6</sub>)alkyl)amino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminosulfonyl(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl or cyano(C<sub>1</sub>-C<sub>6</sub>)alkylcarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl.

30. (Currently Amended) The compound of claim 20 or 21 wherein  $R^5$  is amino( $C_1$ - $C_6$ )alkylaminocarbonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylamino( $C_1$ - $C_6$ )alkylaminocarbonyl amino( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>amino( $C_1$ - $C_6$ )alkylaminocarbonylamino( $C_1$ - $C_6$ )alkyl, aminocarbonyl( $C_1$ - $C_6$ )alkylaminocarbonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylcarbonylamino( $C_1$ - $C_6$ )alkylaminocarbonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkylaminocarbonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkoxycarbonyl amino( $C_1$ - $C_6$ )alkylaminocarbonylamino( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heterocycloalkyloxycarbonyl amino( $C_1$ - $C_6$ )alkylaminocarbonylamino( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heteroaryloxycarbonylamino( $C_1$ - $C_6$ )alkylaminocarbonylamino( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heterocycloalkyl( $C_1$ - $C_6$ )alkylaminocarbonyl amino( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heteroaryl( $C_1$ - $C_6$ )alkylaminocarbonylamino( $C_1$ - $C_6$ )alkyl, ureido( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>ureido( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkyl or cyanoguanidino( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkyl.

31. (Currently Amended) The compound of claim 20 or 21 wherein  $R^5$  is amino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>amino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, acetylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, (acetyl)(( $C_1$ - $C_6$ )alkyl)amino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ureido( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylureido( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>ureido( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, cyanoguanidino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkyl(cyanoguanidino)( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>(cyanoguanidino)( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, aminocarbonyl( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkoxycarbonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heterocycloalkyloxycarbonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_2$ - $C_9$ )heteroaryloxycarbonylamino( $C_1$ - $C_6$ )alkylsulfonylamino( $C_1$ - $C_6$ )alkyl, aminosulfonylamino( $C_1$ - $C_6$ )alkyl, ( $C_1$ - $C_6$ )alkylaminosulfonylamino( $C_1$ - $C_6$ )alkyl or (( $C_1$ - $C_6$ )alkyl)<sub>2</sub>aminosulfonylamino( $C_1$ - $C_6$ )alkyl.

32. (Currently Amended) The compound of claim 20 or 21 wherein R<sup>5</sup> is cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkyl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl(C<sub>1</sub>-C<sub>6</sub>)alkyl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkyl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl, amino(C<sub>1</sub>-C<sub>6</sub>)alkyl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)alkyl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkyl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkyl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl or ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkyl(cyanoguanidino)(C<sub>1</sub>-C<sub>6</sub>)alkyl.

33. (Currently Amended) The compound of claim 20 or 21 wherein R<sup>5</sup> is (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkylsulfonyl, amino(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>2</sub>-C<sub>9</sub>)heteroarylaminosulfonyl, ureido(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>1</sub>-C<sub>6</sub>)alkylureido(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>ureido(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryloxycarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, aminocarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, cyanoguanidino(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>2</sub>-C<sub>9</sub>)heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkylaminosulfonyl, Other preferred compounds of formula I include those wherein R<sup>5</sup> is halo(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonyl, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkylureido, halo(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkylaminocarbonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, halo(C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, aminosulfonyl, (C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>aminosulfonyl, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl, and/or (C<sub>1</sub>-C<sub>6</sub>)alkoxy(C<sub>1</sub>-C<sub>6</sub>)alkylaminosulfonyl.